

Virtual Learning Adoption Challenges among Educators in Malaysia during Pandemic Era: A Conceptual Paper

Nik Amalena Najebah Nik Azman *
Universiti Tenaga Nasional
Email: Amalena@uniten.edu.my

Nur Hazrini Mohd Zahari
Universiti Tunku Abdul Rahman
Email: Hazrini@utar.edu.my

Sharina Mohd Salleh
Universiti Tenaga Nasional
Email: Sharina@uniten.edu.my

** Corresponding Author*

Abstract

Purpose: This conceptual paper aims to further understand the challenges of adoption n virtual learning among the educators in Malaysia in the current situation of pandemic COVID-19 outbreak. This paper is adopting Diffusion Innovation Theory that was introduced by Rogers (1995). This theory is one of the most appropriate theories in investigating the adoption of technology in education system especially in higher education.

Design/methodology/approach: Review of the literature in this study was made based on the five attributes in the Rogers Theory namely; Perceived Relative Advantage, Perceived Compatibility, Perceived Complexity, Perceived Trialability, and Perceived Observability. As this is a conceptual paper, only proposed methodology has been presented. In measuring all the five attributes, the data may be obtained through the survey among the selected sample.

Research limitations/implications: As this is a conceptual paper, there are only some literature from the past researches, hence, in order to proceed the empirical research in the future, a wider range of literatures need to be explored in order to obtain more insightful knowledge and results.

Practical implications: Proper challenge adoption in education system were anticipated to ensure a better preparation among educators that will indirectly ensure uninterrupted learning and will support the Sustainability Development Goals 4 (SDG 4), education goal which it aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all by 2030.

Originality/value: This conceptual paper is anticipated to provide a new insight in the education system in the context of innovation diffusion among educators in Malaysia during this pandemic crisis.

Paper type: Conceptual paper

Keywords: Virtual learning, Educators, COVID-19, Pandemic, Diffusion innovation theory

Introduction

Before the outbreak of Coronavirus Disease 2019 (COVID-19) pandemic, the year 2020 started with the usual activities in Malaysia; parents were still going to work, educators were starting their school session by preparing materials for the face-to-face teaching and learning process, and children were looking ahead to learn at school and for school holiday. However, the COVID-19 pandemic happened and turned everything upside down. Routines changed and every single individual in Malaysia needed to adapt with the changes. The outbreak of COVID-19 not only caused health crises around the world, but it also had affected all aspects of life, including education (Lapada, Miguel, Robledo & Alam, 2020). The learning methods at all level of education had been switched to online.

Online learning or virtual learning systems are web-based software for distributing, tracking, and managing courses over the internet. It involves the implementation of advancements in technology to direct, design and deliver the learning content, and to facilitate two-way communication between students and teachers, even though they are separated physically and geographically. Virtual learning is actually not a new thing; it was initiated due to the rapid changes of technology. The widespread development of information and communication technologies has significantly changed the attributes of the learning environment and opening the new possibility of better learning environments (Duan, He, Feng, Li & Fu, 2010). It has provided significant opportunities for every parties in the education line to explore and develop new ways in educational system. However, it becomes popular during this current pandemic era. It needed to be enforced immediately to ensure the continuity of the education process in Malaysia.

Virtual learning is defined as learning experiences in synchronous or asynchronous environments using different devices for example mobile phones, laptops and others with the existence of internet access (Singh & Thurman, 2019). The synchronous environment means the students can attend lectures which are conducted live and there will be real time interaction between educators and learners, hence there will be instant feedbacks from the session. In Malaysia, synchronous learning via live sessions is recorded and made available to students who could not join the session in real-time which assist the asynchronous learning (Sawal, 2020). On the other hand, asynchronous learning environments are the ones which are not conducted live therefore instant feedback or response are not possible to happen (Littlefield, 2018). The asynchronous mode allows students to view the recorded sessions, lecture notes or any online discussions in their own time. Educators use various platforms and methods including social media platforms such as WhatsApp, Telegram and WeChat to engage with their students (Sawal, 2020).

During the global COVID-19 pandemic, according to The United Nations Educational, Scientific and Cultural Organisation (UNESCO,), 1.3 billion students registered in schools and universities were not allowed to attend their regular daily classes. Indirectly, it indicates that virtual learning is no more of an option to students all over the world including in Malaysia. It has become the new norm with more flexible teaching and learning processes. The students and educators must adapt to this new norm and familiarise themselves with the online methodology to move beyond their comfort zone. By embracing to these changes, it is believed that it will likely inspire the educators to explore more online platforms for them to engage more in the online classes and activities (Sawal, 2020).

Problem Statement

Virtual learning has different terminologies and it is becoming a particular challenge for some especially in the situation of emergency which is a prompt shift from traditional concept of learning to virtual learning (Hodges, Moore, Lockee, Trust & Bond, 2020). Most educators

have been thrown into the world of virtual learning for which neither they themselves nor their condition were well prepared and suitable for this new way of teaching and learning. The sudden change of this situation has forced all educators and students to adapt to the new method of learning. Hence, the transition of the way of learning without any prior preparation contributes a lot of problems for all of the educators (Elsa, Nasrullah & Eka, 2020).

In addition, most of the educators are struggling in conducting their teaching and learning process due to the need to integrate the technology in their teaching and learning activities. According to Ghavifekr, Kunjappan & Ramasamy (2016), integrating technology into the teaching and learning process is a dynamic process that may cause educators to face a variety of difficulties. These difficulties that they have to face when conducting this process become the challenge for them. Furthermore, virtual learning process requires adequate time, readiness and preparations in ensuring better experience and successfulness of the classes, otherwise it will affect the teaching and learning process (Mohd Salleh & Nik Azman, 2020).

A survey that was conducted by OECD (2020) found that educators have reported high need for training in the use of Information and Communications Technology (ICT) in their teaching and learning process. According to Măță, Clipa, and Tzafilkou (2020), educators must possess the ability to integrate IT into the teaching and learning process. In order to possess such ability, they need sufficient and continuous trainings. It requires time, readiness and preparation by the educators. Beside the inadequate time, readiness and preparation, there are other problems and challenges such as internet access and bandwidth, technological breakdowns, different individual student schedules and technology gap. These are all real problems faced throughout the virtual learning process. Hence, for further investigation, problems which are known as challenges in the virtual learning process in this pandemic era needed to be identified. Thus, this paper aims to enlighten on the virtual learning challenges adoption among educators in Malaysia during the pandemic crisis specifically on the innovation diffusion. Therefore, researcher can use this conceptual paper to answer the following research questions:

1. Is there any relationship between perceived relative advantage and challenges of virtual learning adoption among educators in Malaysia?
2. Is there any relationship between perceived compatibility and challenges of virtual learning adoption among educators in Malaysia?
3. Is there any relationship between perceived complexity and challenges of virtual learning adoption among educators in Malaysia?
4. Is there any relationship between perceived trialability and challenges of virtual learning adoption among educators in Malaysia?
5. Is there any relationship between perceived observability and challenges of virtual learning adoption among educators in Malaysia?

Related Literature

Adoption of Virtual Learning

Virtual learning is not a new thing; it was initiated due to the rapid changes of technology. The widespread development of ICT has substantially improved the characteristics of the learning environment (Duan, He, Feng, Li & Fu, 2010). It has offered substantial opportunities for every parties in education line to discover and create new ways in the educational system. It has been widely used in higher education prior to this COVID-19 pandemic, however, during that time, it was optional. During the wake of the COVID-19 pandemic, this way of learning is the only option that educators have as they are not allowed to conduct any face-to-face classes. Moreover, virtual learning needed to be enforced immediately to ensure undisrupted education. Even though educators seem to have quickly learn and adopt on how to build and deliver the learning contents (Vaz & Williams, 2021), there are still more challenges that they have to

overcome in adapting to this sudden change of teaching and learning process so they can deliver the lesson to their students effectively.

A survey done by Melbourne Graduate School of Education found that internet access, teachers' preparedness, curriculum development support and remote learning tools are the main factors that will affect the virtual teaching and learning process especially during this situation (Ziebell, Acquaro, Pearn & Wee, 2020). Furthermore, according to Forbes (8 Dec 2020), a survey done among 1,240 teachers from the age of 21 to 64 years old reported that there are only 113 or 9.7% teachers who said that they enjoy more of their current teaching and learning process while 698 or 60% teachers revealed that they enjoy less. It shows their frustration with the pandemic education. Meanwhile in Malaysia, 80% of teachers agreed that the biggest challenge on online learning is to make sure that the students join, participate and pay attention during the virtual class that were conducted. Besides that, the educators need to adjust and revamp the teaching method to fit the needs and level of students' preparedness for the lesson (Mansor, 2020).

Diffusion Innovation Theory

Virtual learning is known as an innovative concept of teaching and learning as it utilise the emerging ICT equipment (Duan et al., 2010). Even though the provision of virtual learning can be different in terms of platforms and application contexts, the innovative concept remains the same, which minimise the face-to-face classes and is more flexible. According to Rogers (1995), there are five attributes of an innovation that become key influencers on innovation adoption and diffusion. According to Sahin (2006) and Medlin (2001), Rogers' diffusion of innovation theory is the most appropriate theory in investigating the adoption of technology in education system especially in higher education. Hence, this study is adopting the diffusion of innovation theory by Rogers (1995) to discover the educators' challenge adoption towards online learning during this COVID-19 era. Rogers (1995) has identified five attributes in this theory to study on the influences of people to adopt or diffuse certain changes in life. The five attributes are perceived relative advantage, perceived compatibility, perceived complexity, perceived trialability and perceived observability.

Perceived Relative Advantage

Relative advantage suggests that the extent of the people believe that the innovation is better than the traditional one (Zhang et al., 2010). Under this attribute, it does not matter whether the innovation offers real advantages to the real-life experience or not (Rogers, 2003). It is more on how people could see that the innovation is able to offer better advantages to the adopter (Penjor & Zander, 2015). Chen & Hung (2010) stated that "relative advantage is a measure of the degree where the action will provide more benefit than its precursor". Their study found that perceived relative advantage is positively affect knowledge collective behaviors. Previous study also found that perceived relative advantage is able to influence knowledge sharing behavior (Lin et al., 2009). Therefore, this attribute suggests on how people perceive the innovation to be advantageous to them. The relative advantage under this attribute is measured in terms of economic terms, social prestige, convenience, and satisfaction (Rogers, 1995). It is suggested that the more people perceived that the innovation bring the relative advantage to them, the more rapid its rate of adoption will be. Otherwise, if people perceived that the innovation offers no real advantage, it is believed that people are going to face a problem in adopting the innovation. In this context of study, the educators in Malaysia might face a lot of challenges in adopting the virtual learning if they believe that it does not bring any advantages.

Perceived Compatibility

Compatibility suggests to the extent people believe that the innovation is compatible with the traditional way of carrying out certain activity, (Zhang et al., 2010). The idea of compatibility of the innovation must meet existing value, past experience and needs of potential adopters if they switch from the traditional way to adopt the new way of conducting activities (Scott et al., 2008). It is suggested that if people believe that the new innovation is not compatible with the values and norms of the social system, the new innovation will not be adopted (Rogers, 1995). Previous study by Scott et al. (2008) stated that there is a strong direct relationship between compatible of innovation and user adoption. Cheng (2015) found that perceived compatibility is able to influence the user's preferable technology adoption. Huang (2018) also found that higher level of perceived compatibility will have positive user's technology belief. Thus, it is suggested that the more people perceive compatibility, the more people will adopt the technology usefulness. It is also believed that if people do not believe that the new innovation is compatible with the traditional way of carrying out certain activities, they will face some challenges in adopting the new innovation to replace the old ways of doing things. Hence, it is anticipated that educators in Malaysia will face some challenges in adopting the virtual learning if they have the belief that the virtual learning is not compatible with the traditional ways of delivering lessons.

Perceived Complexity

Perceived Complexity suggests the extent on which people find the innovation is difficult to use and understand (Zhang et al., 2010). Under this attribute, it is believed that some innovation might be easier for people to understand, and some other innovations might need additional knowledge (Rogers, 1995). Hence, effort and additional time are required to ensure better adoption by the users (Penjor & Zander, 2015). Roger (2003) suggested that the new innovations needed to be clearly understood by the potential adopters. Yim et al. (2018) found that perceived complexity has the ability to encourage and promote positive perception on virtual learning among teachers. However, previous research by Duan et al. (2010) found insignificant relationship between perceived complexity and adoption of e learning. Therefore, it is suggested that if the new technology is too difficult to be used, some people will avoid the transition towards better innovation. In this case, it is anticipated that if the educators in Malaysia believe that the innovation is too complex and difficult to be used, they will face some challenges in adopting the virtual learning into practice.

Perceived Trialability

Perceived trialability is the degree of people believing that there are chances for them to try and experience the innovation before they adopt it (Zhang et al., 2010). This gives the adopter ample time to understand the functions and benefits of the new innovation and technology (Penjor & Zander, 2015). Previous study found negative relationship between perceived trialability and e-learning adoption (Duan et al., 2010). However, Mohamad Hsbollah and Md Idris (2009) found positive relationship between perceived trialability and adoption decision. Rogers (1995) also stated that if the adopter are not able to try the technology, there is a high chance that they will avoid the adoption of the new technology. This shows that adopter need to test run to experience the technology before they could fully adapt to it. Therefore, it is assumed that if the educators in Malaysia believe that they are not open to try and experience the innovation, there are possibilities that they will face some challenges in adopting the virtual learning. This is because without the chances to test and experience the innovation, they will not be able to enjoy the many benefits of the innovation and technology in their teaching and learning process.

Perceived Observability

According to Rogers (2003), perceived observability can only be known when people are able to see the result of the innovation. It is easier for people to adopt the innovation or technology if they can observe the results from using it themselves (Zhang et al., 2010). Previous study found that the more difficult the technology is, the higher the risk that people will refuse to adopt it (Penjor & Zander, 2015). Duan et al. (2010) also found insignificant effect on perceived observation and student’s intention on e-learning. Thus, it is suggested that people will only be interested in the new technology once they heard the experience from people they know. In this case, it is believed that there will be some challenges which will be faced by the educators in Malaysia in adopting the virtual learning if they are not able to observe the result of the innovation before adopting the innovation themselves.

Proposed Conceptual Framework

This conceptual paper attempts to determine the relationship between perceived relative advantage, perceived compatibility, perceived complexity, perceived trialability, and perceived observability towards the virtual learning adoption among educators in Malaysia. The conceptual model shown in Figure 1 is the adoption from the theory of diffusion of innovation by Roger (1995). Therefore, as shown in Figure 1, the study proposed:

Proposition 1: There is a significant relationship between perceived relative advantage and challenges of virtual learning adoption among educators in Malaysia.

Proposition 2: There is a significant relationship between perceived compatibility and challenges of virtual learning adoption among educators in Malaysia.

Proposition 3: There is a significant relationship between perceived complexity and challenges of virtual learning adoption among educators in Malaysia.

Proposition 4: There is a significant relationship between perceived trialability and challenges of virtual learning adoption among educators in Malaysia.

Proposition 5: There is a significant relationship between perceived observability and challenges of virtual learning adoption among educators in Malaysia.

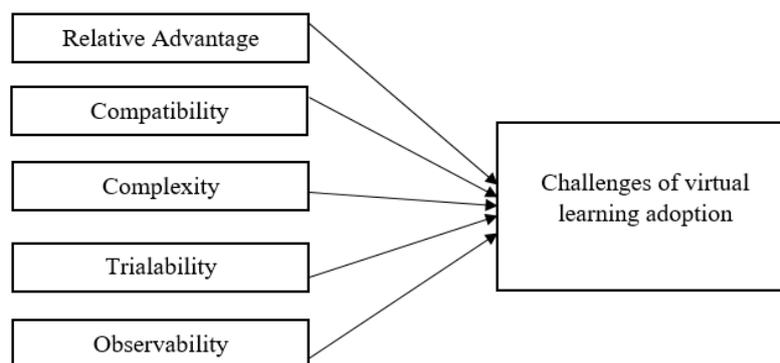


Figure 1: Conceptual Framework

Proposed Methodology

This quantitative study plans to adopt survey as the research method. As per discussed in the literature, there are five elements in identifying the challenges of teachers in adopting virtual learning during pandemic. The questionnaire composed by several parts including the

measurement of perceived relative advantage, perceived compatibility, perceived complexity, perceived trialability, and perceived observability. These five elements were adopted from Rogers (1995), Martins, et al. (2004) and Duan et al. (2010) with slight revision to fit, suit and remain the relevancy of the context of this study. In addition, the demographic factors of the respondents such as gender, age, teaching experience, and household income will be gathered to be used as the descriptive result of the paper. The quantitative and primary data will be obtained through the distribution of questionnaire to the target respondents via email. The respondents will consist of educators in Malaysia who are now undergoing the virtual learning in their teaching and learning process. All variables will be measured based on 5-point Likert scale. It is used to measure the level of agreement or disagreement towards the statement given with five different scale rates that range from (1) = Strongly Disagree to (5) = Strongly Agree. From the survey conducted, it is expected to achieve the objective of the study.

Conclusion

Even though this a conceptual paper, it is anticipated that the content will help contribute to supplement literatures and for the reference of researchers as well as a significant impact to all the educators, learning institution and the ministry as policy makers regarding the education of Malaysia's future generation upon fully completing the research. Furthermore, the findings provide a gateway to the study of the relationship between the variables proposed and the challenges of virtual learning adoption among educators specifically in Malaysia. In order to proceed the empirical research in the future, a wider range of literatures need to be explored to obtain more insightful knowledge. In addition, future findings will be a huge contribution to the nation as this study is a part of efforts in supporting the Sustainability Development Goals 4 (SDG 4), education goal. It aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all by 2030."

Acknowledgment

This research was fully supported by YCU Grant at Universiti Tenaga Nasional (Project Code: 202101003YCU).

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